

NOV 21 2017

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UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF VIRGINIA  
ROANOKE DIVISION

UNITED STATES OF AMERICA : Criminal No. 7:17CR73  
:   
v. : Violations of  
: 18 U.S.C. § 371  
YIHENG PERCIVAL ZHANG : 18 U.S.C. § 1001(a)(2)  
: 18 U.S.C. § 287

INDICTMENT

INTRODUCTION

The Grand Jury charges that:

1. YIHENG PERCIVAL ZHANG ("ZHANG") was a professor in the Department of Biological Systems Engineering at Virginia Tech.
2. ZHANG was the founder and Chief Scientific Officer of Cell-Free Bioinnovations, Inc. ("CFB").
3. The National Science Foundation ("NSF") is an independent agency of the United States Government. NSF's mission includes awarding federal funds to support all fields of fundamental science and engineering, except for medical sciences.
4. CFB utilized the Small Business Innovation Research ("SBIR") and Small Business Technology Transfer ("STTR") funding programs managed by NSF.
5. The SBIR program was established by Congress in 1982 to provide increased opportunities for small businesses to participate in research and development to increase employment, and to improve competitiveness in the United

States. Government agencies with R&D budgets of \$100 million or more are required to set aside a percentage of these funds to finance the SBIR program. The intended purpose of the SBIR program is to encourage small businesses to engage in federal Research and Development ("R&D") projects that have potential for commercialization.

6. The STTR program was established by the Small Business Technology Transfer Act of 1992. Government agencies with R&D budgets of \$1 billion or more are required to set aside a percentage of these funds to finance the STTR activity. The goal of the STTR program is to facilitate the transfer of technology developed by a research institution through the entrepreneurship of a small business.

7. The primary difference between the SBIR and STTR programs is that the STTR program requires a team approach, in which the small business must partner with a collaborating research institution ("CRI"), such as a university. The CRI must receive a minimum of thirty percent (30%) of the award funds and perform a minimum of thirty percent (30%) of the research.

8. SBIR/STTR awards are divided into two phases. Phase I is a feasibility study to determine suitability of further research with regard to a particular topic. It generally lasts six to twelve months and is funded with an amount between \$70,000 and \$225,000, depending on the awarding agency. Phase II consists of expansion and development of the technology investigated in Phase I, typically lasts two years, and is funded with an amount between \$300,000 and \$1 million. A company must submit a

successful final report upon conclusion of Phase I to be eligible to receive a Phase II award.

9. NSF does not provide funding for work already performed; the work should be based on innovative, transformational technology. ZHANG served as an NSF reviewer in 2008 and 2009 and knew that NSF funding is for novel technology. He reviewed one proposal and gave it a "Poor" rating noting, "NSF does not support non-transformative research. The proposers need prove technological and economical [sic] feasibility for this "new" technology."

10. Proposals to NSF include the following language that must be certified in order to be considered for funding:

By electronically signing and submitting this proposal the Authorized Organizational Representative (AOR) or Individual Applicant is: (1) certifying that statements made herein are true and complete to the best of his/her knowledge; and (2) agreeing to accept the obligation to comply with NSF award terms and conditions if an award is made as a result of this application... Willful provision of false information in this application and its supporting documents or in reports required under an ensuing award is a criminal offense (U.S. Code, Title 18, Section 1001).

### **COUNT ONE**

The Grand Jury charges that:

1. The allegations in the Introduction are realleged and incorporated by reference.

2. From in or about May 2015 through in or about December 2016, in the Western District of Virginia and elsewhere, ZHANG and others conspired to (a) defraud the United States and agency thereof in any manner and for any purpose and (b) commit an offense against the United States, that is, in a matter within the jurisdiction of the executive branch of the Government of the United States, to knowingly and willfully make a materially false, fictitious, and fraudulent statement and representation, in violation of Title 18, United States Code, Section 1001(a)(2).

3. The purpose of the conspiracy was for CFB to receive NSF funding by fraudulently representing that grant funds would be used to fund certain research when, in fact, the funds were to be used for other purposes.

4. Sugar phosphates are drugs and the precursors for drugs for the treatment of various diseases. CFB's STTR Phase I application requested funds to research a low-cost method for the production of sugar phosphates from starch. Inositol is a nutrient belonging to the vitamin B family which can promote human and animal health benefits; deficiency in inositol is linked to many diseases. CFB's SBIR Phase I applications requested funds to research a low-cost method for the production of inositol from starch.

5. To effect the objects of the conspiracy, one or more of the conspirators did various acts including, but not limited to, the following:

a. On or about May 18, 2015, ZHANG sent an email to CFB employee DW stating:

What we expect here is to get this free money and use half of money to do what you want to do – make sweeteners. Another half will be used to pay VT graduate students to finish this project.

b. On or about June 11, 2015, ZHANG sent an email to CFB

employees DW, ER and CY stating:

Now D[W] and C[Y] are submitting NSF SBIR I (inositol) and STTR I (sugar phosphate) projects via CFB, respectively. Indeed, nearly all experiments in SBIR I (inositol) have been finished...Now we submit this SBIR proposal. If it is funded, most of SBIR I will be used for CFB to support the other projects...About sugar phosphate project, the experiments have been conducted by one of my collaborators and my satellite lab in China...If this project is funded by STTR, most of money will be used to fund the other project in CFB, too.

c. On or about December 18, 2015, ZHANG sent an email to CFB

employees ER and ZZ stating:

Second, the inositol project was funded by Chinese funding agency, starting in the late of 2014. We tried to let CFB to take advantage of the inositol project developed in China and raise funding to support other projects developed in CFB...Similar to the sugar phosphate project. The idea and funding of this projects occurred in China and other inventors before CFB received the NSF STTR I grant. CFB should have no right to claim this invention. The other party did a favor to CFB, but your doing stopped any further support like this. I have clear and strong evidences pertaining to previous funding support in China for both inositol and sugar phosphate projects.

d. On or about June 16, 2015, CFB submitted an Inositol Proposal (IIP-1548815) to NSF through NSF's electronic FastLane system seeking funding for a SBIR Phase I project.

e. On or about June 16, 2015, CFB submitted the Sugar Phosphate Proposal (IIP-1549018) to NSF through NSF's electronic FastLane system seeking funding for a STTR Phase I project.

f. On or about December 7, 2015, CFB submitted an Inositol Proposal (IIP-1621085) to NSF through NSF's electronic FastLane system seeking funding for a SBIR Phase I project.

6. The submissions falsely represented the funds sought would be used to fund new research on certain matters, when, in fact, the funds were to be used for other purposes, and did not disclose that the work represented to be performed with grant funds had already been done.

7. All in violation of Title 18, United States Code, Section 371.

### **COUNTS TWO THROUGH FOUR**

The Grand Jury charges that:

1. The allegations set forth in the Introduction and Paragraphs 5(a), 5(b), 5(c), 5(d), 5(e), 5(f), and 6 of Count One are realleged and incorporated by reference.

2. On or about the following dates, in the Western District of Virginia and elsewhere, YIHENG PERCIVAL ZHANG ("ZHANG") caused knowingly and willfully materially false, fictitious, and fraudulent statements and representations to be made, in a matter within the jurisdiction of the executive branch of the Government of the United States:

<u>COUNT</u>	<u>DATE</u>	
TWO	June 16, 2015	Inositol Proposal for SBIR Phase 1 Project
THREE	June 16, 2015	Sugar Phosphate Proposal for STTR Phase 1 Project
FOUR	December 7, 2015	Inositol Proposal for SBIR Phase 1 Project

3. All in violation of Title 18, United States Code, Sections 2 and 1001(a)(2).

### COUNTS FIVE THROUGH SEVEN

The Grand Jury charges that:

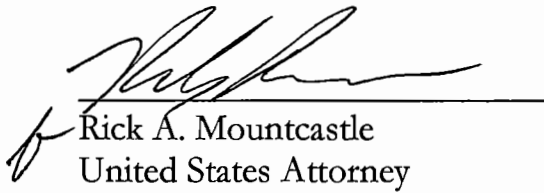
1. The allegations set forth in the Introduction and Paragraphs 5(a), 5(b), 5(c), 5(d), 5(e), 5(f), and 6 of Count One are realleged and incorporated by reference.
2. On or about the following dates, in the Western District of Virginia and elsewhere, YIHENG PERCIVAL ZHANG ("ZHANG") caused to be made and presented a claim upon and against an agency of the United States, knowing such claim to be false, fictitious and fraudulent.

<u>COUNT</u>	<u>DATE</u>	<u>CLAIM</u>
FIVE	June 16, 2015	\$150,000 federal funds for Inositol Proposal for SBIR Phase 1 Project SBIR Phase I
SIX	June 16, 2015	\$225,000 federal funds for Sugar Phosphate Proposal for STTR Phase 1
SEVEN	December 7, 2015	\$225,000 federal funds for Inositol Proposal for SBIR Phase 1 Project

3. All in violation of Title 18, United States Code, Sections 2 and 287.

A true bill, this 21<sup>st</sup> day of November 2017.

/s/ Grand Jury Foreperson  
Grand Jury Foreperson

  
Rick A. Mountcastle  
United States Attorney